

Tommy's Troubles¹

Southeast Center for Agricultural Health and Injury Prevention²

This is a story about a boy who gets into trouble.

INSTRUCTIONS

Get together with two or three of your friends. Then read the story and answer the questions that appear in the story. Work the exercise a question at a time. Don't jump ahead, but you can look back to earlier questions. Mark your answers with a pen or pencil. When you have finished the story, discuss your ideas and feelings with your friends and the instructor. When you have finished the exercise, review your responses with the answers provided in the second half of this handout.

TOMMY'S STORY

Tommy, age 15, helps his mom and dad on their 180 acre farm. He started driving tractor when he was 12 and is now learning to bushhog. Tommy's dad doesn't wear the seat belt on their ROPS-equipped tractor, but tells Tommy to wear the belt.

Tommy wants to help after school by bushhogging the six-foot-high weeds in the north pasture. Dad says "OK, but be careful. I'll be at work in town and can't help you." Tommy gets home from school at 3:30, puts on old clothes and does his barn chores. Then he hitches the bushhog to the tractor. Because he's going to a basketball game soon, Tommy washes his hands and face, and then puts on his good clothes so he will be ready when his friends get there. Then he gets on the tractor and starts to bushhog.

QUESTIONS

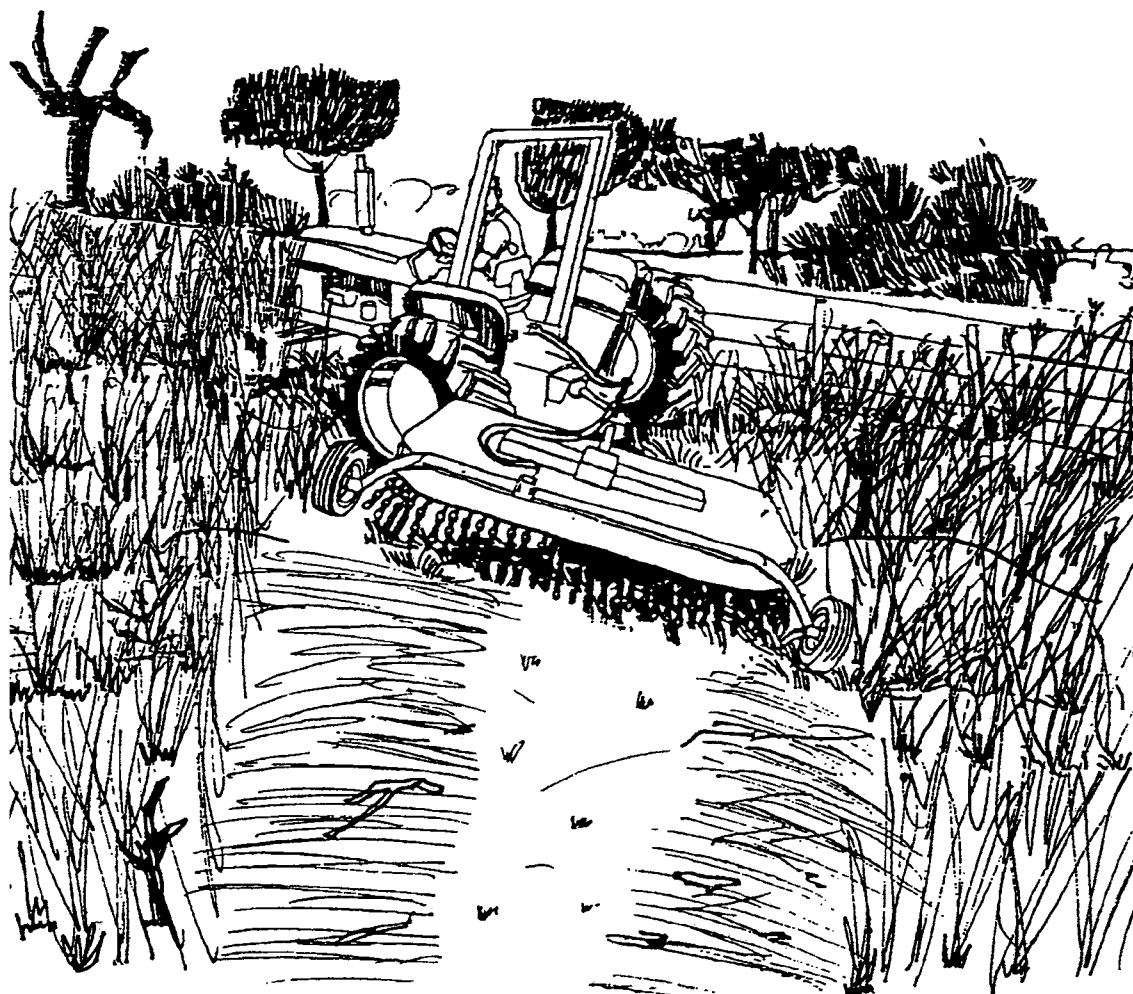
Question A

Look at Figure 1. What are some possible hazards for Tommy as he bushhogs the pasture? (Mark each item T for true or F for false.)

- ___ 1. Poor visibility as he drives the tractor in the tall weeds.
- ___ 2. Catching the weeds on fire with the tractor.
- ___ 3. Being stung by wasps or bees.

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Figure 1: Tommy starts mowing the tall weeds



- ___ 4. Running into a hole, a rock, or stump.
- ___ 5. Bumping a tree and having a dead limb fall on him.

Answer

- T 1. Because of the weeds Tommy can't see the ground.
- F 2. Unlikely. Modern tractors are designed to prevent setting fires.
- T 3. Wasps and bees nest in weeds. Stings can cause injury or death.
- T 4. Striking such objects can flip the tractor or throw the driver.
- T 5. Dead branches can fall and injure or kill the driver.

Question B

As Tommy mows it gets rougher. He can't see the ground. He thinks about putting on the seat belt. It is greasy and he doesn't want to get his good clothes dirty. Twice he has to shut the tractor down and get off to clean brush out of the bushhog. If Tommy were your son (or brother), do you think he would put on the seat belt? (Place a checkmark in one blank.)

- ___ 6. Tommy would not wear the seat belt.
- ___ 7. Tommy would wear the seat belt.

Answer

- ? 6. Studies in Kentucky find that only 20 percent of persons who have ROPS and seat belts on their tractors actually wear the seat belts. Only 30 percent of Kentucky tractors have ROPS.
- ? 7. Tommy would be more likely to wear the belt if: (a) his dad wore the belt, and (b) if the belt were clean. Studies show equipment operators don't like to wear dirty seat belts.

Question C

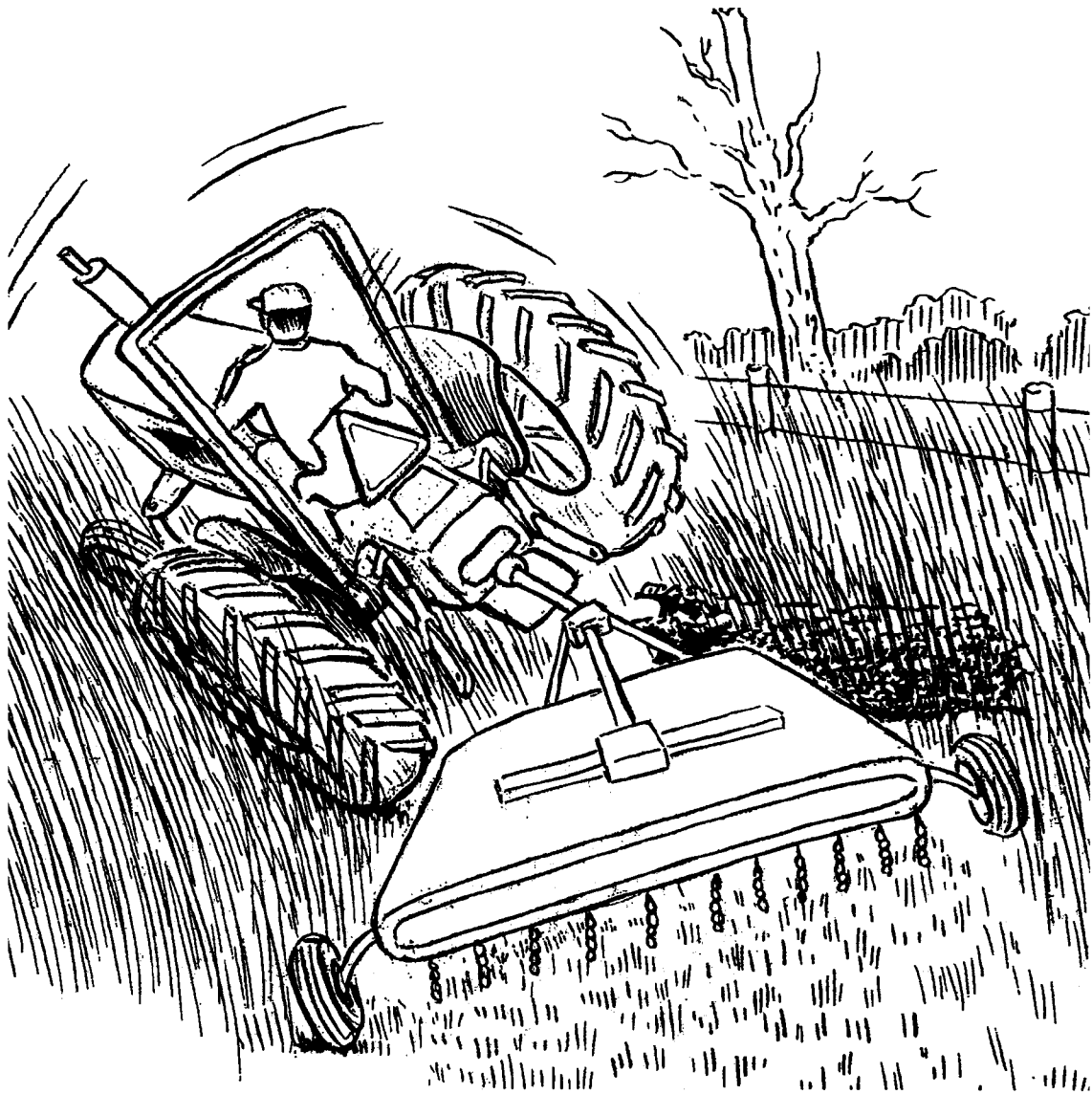
The ground gets smoother and Tommy speeds up so he won't be late for the basketball game. Suddenly the right-front wheel strikes a tree stump. The tractor is thrown upward and starts to roll over. See Figure 2. At this instant, what can Tommy do to prevent a roll over and getting hurt? (Mark each item T for true or F for false.)

- ___ 8. Jump off the tractor before it overturns.
- ___ 9. Push in the clutch.
- ___ 10. Shift his weight to the right.
- ___ 11. Turn the tractor wheels to the right.
- ___ 12. There is nothing he can do now.

Answer

- F 8. Can't react this fast. His reflexes will cause him to hang on.
- F 9. Won't help. The stump has transferred the forward motion of the tractor to a rolling-over motion.
- F 10. Tommy's mass is so small shifting his weight won't help.
- F 11. The tractor is flipping. The front wheels are off the ground.

Figure 2: The tractor strikes a stump and starts to overturn



- T 12. Things to prevent the rollover and injury had to be done before this instant. These include (a) Tommy wearing the seat belt, (b) Tommy's father setting a good example by always wearing the seat belt, (c) Tommy's parents supervising his work, especially for a new and difficult task, and (d) removing or marking hazardous objects in pastures and fields.

Question D

In the United States, what percentage of farm fatalities are related to injuries from tractors? (Put a checkmark in front of the correct answer.)

- ☐ 13. 10%
- ☐ 14. 25%
- ☐ 15. 33%
- ☐ 16. 45%
- ☐ 17. 66%

Answer

- X 15. This statistic reported in Murphy, 1992, p. 65 is based on a study of farm fatalities in 31 states. This study included all ages of persons killed in farm accidents. Males age 14 to 19 and over 65 are at higher risk of fatal injuries from tractors (Murphy, 1992, p. 65)

Question E

In Central Kentucky, what percent of farm tractor drivers are protected by both a ROPS and a seat belt? (Put a checkmark in front of the correct answer.)

- ☐ 18. 6%
- ☐ 19. 10%
- ☐ 20. 22%
- ☐ 21. 30%
- ☐ 22. 55%

Answer

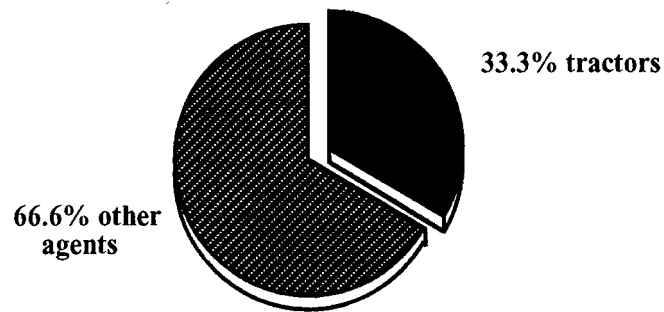
- X 18. This statistic is based on a study done by Bechanan in 1993. Only 30% of the farm tractors in two central Kentucky counties were equipped with ROPS. Only 20% of drivers of ROPS equipped tractors used the seat belts ($0.20 \times 0.30 = 0.06$ or 6%).

Question F

What percentage of all persons killed by farm tractor accidents in the United States are caused by roll overs? (Put a checkmark in front of the correct answer.)

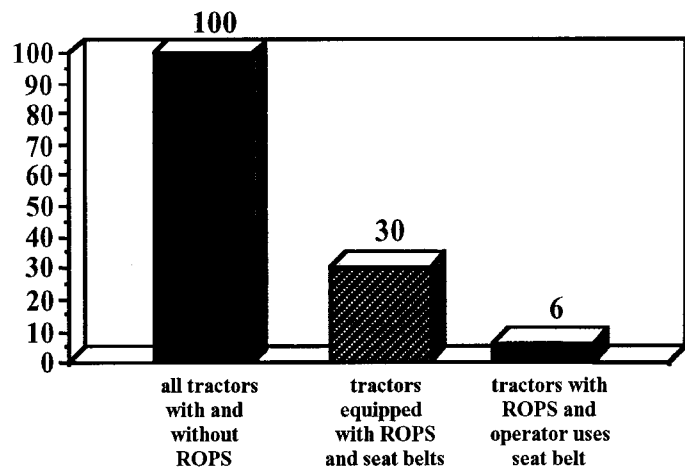
- ☐ 23. 12%
- ☐ 24. 25%
- ☐ 25. 35%
- ☐ 26. 48%

**Percent of farm fatalities related to tractors
and all other agents in 31 states***



*(Murphy, 1992, p. 65)

**Percent of persons protected by tractor ROPS
and seat belts in two Kentucky counties***



*(Bechanan, 1993)

____ 27. 60%

Answer

- X 26. This statistic is based on a national study done by McKnight & Hetzel in 1985 and reported in Murphy, 1992, p. 61.

Farm Bureau newsclippings from the state of Kentucky from 1983 to 1992 reveal that 71.8% of all farm tractor fatalities were from overturns.

Question G

Think about this story. Then talk about what could happen to Tommy and his family if:

- ____ 27. Tommy wore the seat belt.
____ 28. Tommy did not wear the seat belt.

After you have talked about this, read the newsclippings below.

With seatbelt
Without Seatbelt

REFERENCES

- Bechanan, D. A. (1993). Attitudes and decision making in regard to seat belt usage on ROPS equipped tractors in Central Kentucky. Unpublished paper. Lexington, KY: University of Kentucky.
- Kentucky Farm Bureau Newsclipping Files 1983 to 1992. Unpublished report about farm tractor fatalities.
- McKnight, R. H. & Hetzel, G. H. (1985). Trends in farm machinery fatalities. *Agricultural Engineering*, 55(5), 15-17.
- Murphy, D. J. (1992). Safety and health for production agriculture. St. Joseph, MI: ASAE.
- Piercy, L. R. & Stallones, L. (1984). Fatal accidents on Kentucky farms. Paper presented at the 1984 Winter Meeting of the American Society of Agricultural Engineers, New Orleans, Hyatt Regency, December 11- 14.
- Travis, C. (1993). We kill too many farm kids. Revised and reprinted from *Successful Farming*, mid February, 1989 Issue.

27. With seatbelt

Farm youth OK after tractor rollover

A 15-year-old Hazlette County boy escaped injury when the tractor he was operating overturned on Thursday according to the Sheriff's office. About 4:30 P. M. the boy, Tommy, was bushhogging a pasture for his father, Delbert Jackson who was at work. At 6:00 P. M. the boy walked home and reported the accident to his mother who called the Hazlette County Fire and Rescue Squad. Rescue squad, Captain Elmer Fitch, said that, "The boy was shaken up but not injured." The tractor overturned when it ran up onto a stump hidden in the weeds. Fitch said the tractor had a roll-over protection structure (ROPS) and that the boy was wearing his seat belt. "The ROPS prevented the boy from being crushed, and the seat belt held him in the frame of safety provided by the ROPS," Fitch said. Tommy went to school Friday.

28. Without seatbelt

Farm youth injured in tractor rollover

A 15-year-old Hazlette County boy received severe head injuries when he was thrown from a tractor on Thursday according to the Sheriff's office. About 4:30 P. M. the boy, Tommy, was bushhogging a pasture for his father, Delbert Jackson who was at work. About 6:30 P. M., when he failed to return home, his mother found him unconscious near the overturned tractor. The Hazlette County Fire and Rescue Squad responded and transported the youth to Lincoln Memorial Hospital where he is listed in critical condition. Rescue squad, Captain Elmer Fitch, said that, "The boy struck his head against a rock when he was thrown off the tractor." The tractor overturned when it ran up onto a stump hidden in the weeds. Fitch said the tractor had a roll-over protection structure (ROPS) but that the boy was not wearing his seat belt.